

REMARKS

The present application concerns a metal component for a fuel cell.

Preliminary Matters

Claims 1 - 5, 12 - 17, 22, 23, 27, 28, 30 - 34, 36, 38 and 39 are pending and claims 12 - 17 are withdrawn.

In the last Office Action, a few objections were made to the drawings, specification, and claims as discussed below. Claims 1 - 3 and 38 were rejected as being unpatentable under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 2 and 4 were rejected under 35 U.S.C. § 102(b) as being anticipated by Nishida et al, (JP 2000 - 021418). Claims 2 and 4 were rejected under 35 U.S.C. § 102(b) as being anticipated by Fujii et al, (JP 2001 - 297777). Claims 2, 4, and 5 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kito et al, (JP 2001 - 345109). Claims 22, 23, 27, 28, and 39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishida et al, Fujii et al, or Kito et al, each in view of Saito et al, (U.S. Patent No. 6,348,279). Claims 30 - 34, 36, and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kito et al in view of Yamauchi et al, (JP 2002 - 075399).

Amendments

Claims 1 and 2 have been amended as indicated above to further specifically identify what Applicant considers to constitute the present invention. Support for these amendments can be found, for example, at page 44, line 25 to page 45, line 17.

Claim 1 was amended to replace “exposes” with “exposed” and “stretched” with “extended,” as suggested by the Examiner. Also, claim 2 was amended to replace “reflecting” with “forming,” as suggested by the Examiner.

Claims 4 and 5 are canceled.

The drawings were amended to add the number “4by” to Figure 9B and to change the number “6” to “46” in Figure 11A.

The Specification was amended at lines page 53, lines 3 - 20 and page 51, lines 12 - 24, to be consistent with the present drawings.

No new matter is added.

Objections

On page 6, the Office Action objected to the use of the number “6” to denote both a “tightening plate” and “rolls.” Also the number “4by” was not found in the drawings and the word “exposes” in claim 1 should be “exposed.”

Applicant respectfully submits that the above amendments to the present claims, specification, and drawings obviate these objections.

Rejections under 35 U.S.C. § 112

On page 2 of the Office Action, claims 1 - 3 and 38 were rejected as allegedly being unpatentable under 35 U.S.C. § 112, second paragraph, as being indefinite.

Applicant respectfully submits that the above amendments to the present claims obviates this rejection.

Rejection under 35 U.S.C. § 102

On page 2 of the Office Action, claims 2 and 4 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Nishida et al, (JP 2000 - 021418) (“Nishida”). On page 3 of the Office Action, claims 2 and 4 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Fujii et al, (JP 2001 - 297777) (“Fujii”). On page 4 of the Office Action, claims 2, 4, and 5 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Kito et al, (JP 2001 - 345109) (“Kito”).

Applicant’s Response

Applicant respectfully submits that present claim 2 is not anticipated by Fujii and Kito because they do not disclose a requirement of the claim. Present claim 2 recites, in relevant part:

“...having an Au film formed on the main surface of a plate-formed metal base composed of a metal less noble than Au, and said metal base being cut along a planned cutting line forming a contour of said component.”

Thus, the metal component of the present claim has Au layer formed on a metal base and then the metal base and Au layer are cut. In contrast, the above references for form a gold-plated layer on a surface of the irregular portions after pressing. See paragraph [0032] of Fujii.

Therefore, these references do not disclose a process for cutting the metal base after forming the Au layer on the metal base, and do not disclose an Au layer and metal base which are cut.

Moreover, the references do not disclose a second requirement of present claim 2. Present claim 2 recites, in relevant part, “said metal base being cut along a planned cutting line forming a contour of said component.” Thus the metal base must be cut along a planned cutting line after plating in such a way as to form a contour of said component. In contrast, Fujii and Kito do not disclose that the metal base is cut along a planned cutting line after plating as in the

present claim, rather the metal base is cut before plating. Moreover, although Nishida has holes formed after Au plating, those holes do not form a contour of the component as required by the present claim. See, for example, paragraph [0024] of Nishida. Therefore, Applicant respectfully submits that these references do not disclose a requirement of the present claim.

Regarding claims 4 and 5, Applicant respectfully submits that the above amendment obviates the rejection with respect to these claims.

In view of the above, Applicant respectfully submits that reconsideration and withdrawal of the § 102 rejections of the present claims are proper and such action is hereby solicited.

Rejection of claims 22, 23, 27, 28, and 39 under 35 U.S.C. § 103

On page 4 of the Office Action, claims 22, 23, 27, 28, and 39 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nishida et al, Fujii et al, or Kito et al, each in view of Saito et al, (U.S. Patent No. 6,348,279) ("Saito").

Applicant's Response

Applicant respectfully submits that Saito does not relate to the present invention at all. For example, Saito merely controls the surface roughness of a component in order to improve contact resistance. See, for example, column 1, lines 47 - 51 of Saito. In contrast, the presently claimed invention controls surface roughness in order to obtain excellent corrosion resistance. The presently claimed invention obtains an excellent plated layer by controlling the surface roughness, so as to obtain excellent corrosion resistance. The thickness of the plate layer of the present invention is very thin (1 to 500 nm), and therefore the surface roughness of the material is crucial. See, for example, page 16, lines 3 - 15 of the specification. It is very important to obtain an excellent plated layer, so the surface roughness of the material is controlled.

Therefore, Applicant submits that Saito does not relate to the presently claimed invention, so Saito cannot be combined with the above cited reference to render the present claims obvious.

Rejection of claims 30 - 34, 36, and 38 under 35 U.S.C. § 103

On page 5 of the Office Action, claims 30 - 34, 36, and 38 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kito in view of Yamauchi et al (JP 2002-075,399) ("Yamauchi").

Applicant's Response

Applicant respectfully traverses.

Applicant submits that the presently claimed invention is not rendered obvious by the cited references because Yamauchi is nonanalogous art.

Preliminarily, Applicant notes that Kito does not disclose anything regarding the impurities of the plated layer.

The presently claimed invention relates to a conductive component which recites appropriate impurity levels, such that the conductive components are corrosion-resistant. Yamauchi states that impurities such as C, P, S, and O have influences on corrosion resistance and mechanical properties; however Yamauchi also states that they are not relevant for proton exchange membrane fuel cells. Thus, Yamauchi is not related.

Yamauchi is not basically related to plating. Yamauchi states amounts of impurities (C, P, S, and O). However, Yamauchi merely states general influences of the impurities in the metal, but the impurities are not considered to be a problem.

On the other hand, claim 30 makes it clear that removal of the contaminated film from the metal base surface is necessary in order to obtain a robust plated layer. Even though Yamauchi did not recognize the problem, claim 30 consider it as the most important problem. Thus, Yamauchi and the present invention do not relate to each other.

Therefore, Applicant respectfully submits that Yamauchi is non-analogous art, and Kito does not state anything regarding impurities, so the proposed combination of references does not render the presently claimed invention obvious.

Applicant respectfully submits that reconsideration and withdrawal of the present rejections are proper. Such actions are hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

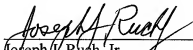
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